



Measuring language attitudes in context

Exploring the possibilities of the P-IAT

Laura Rosseel, Dirk Geeraerts, Dirk Speelman



RU Quantitative Lexicology and Variational Linguistics



Research Foundation
Flanders
Opening new horizons

introduction

- since 1960s **little methodological innovation** in language attitudes research (until recently)
 - can we take advantage of the enormous productivity in attitude research in **social psychology**?
- exploring potential of P-IAT for linguistic attitude research
 - importing situational context into the P-IAT

outline

1. P-IAT 101
2. contextualizing language attitudes research using the P-IAT?
3. case study: introducing context in the P-IAT

P-IAT 101





- reaction time based task to measure association between two concepts

- recently adopted in linguistics

Campbell-Kibler 2012, 2013; Llamas et al. 2016; Hilton, Rosseel, Smidt & Coler 2016; Babel 2010; Redinger 2010; Pantos 2010, 2012; Rosseel, Speelman & Geeraerts 2015; Lee 2015 ; Watt & Llamas 2015; Loudermilk 2015; McKenzie 2017; ...





P-IAT 101

how does it work?

	TARGET	ATTRIBUTE
category names	variety1/variety2	I like / I don't like
stimuli	 	 





P-IAT 101

how does it work?

	TARGET	ATTRIBUTE
category names	variety1/variety2	I like / I don't like
stimuli	 	 

P-IAT 101

how does it work?

	TARGET	ATTRIBUTE
category names	variety1/variety2	I like / I don't like
stimuli	 	 

P-IAT 101



P-IAT 101

variety1

variety2

I don't like

I like

variety2

I don't

variety1

I like

variety1

variety2

variety2

I like

variety1

I don't
like



5 blocks of trials

P-IAT 101

variety1

variety2

I don't like

I like

variety1

I like

variety2

I don't

variety1

variety2

variety2

I like

variety1

I don't
like



5 blocks of trials

P-IAT 104

variety2

variety1

I don't like

I like

variety2

I don't

variety1

I like

variety1

variety2

variety2

I like

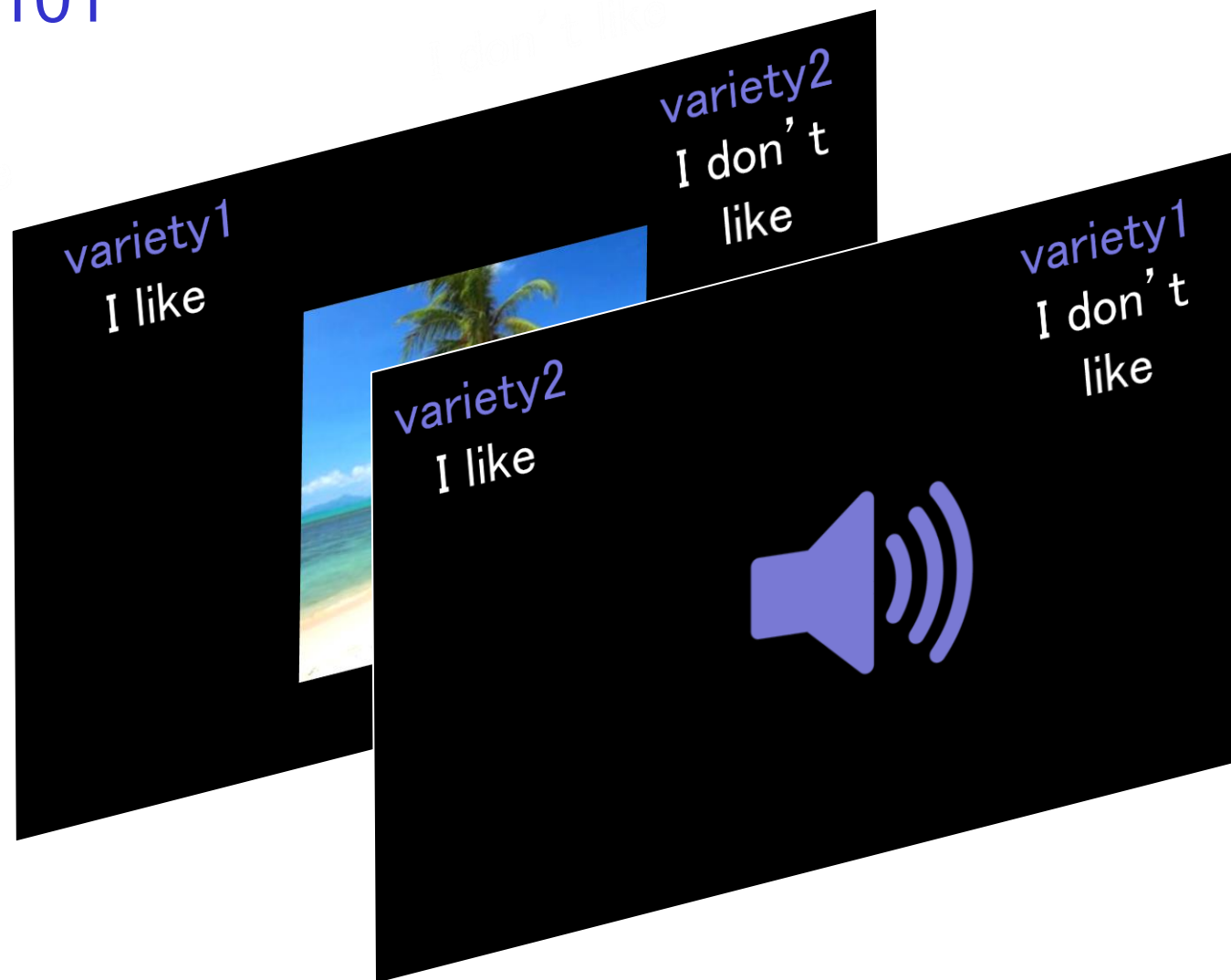
variety1

I don't
like



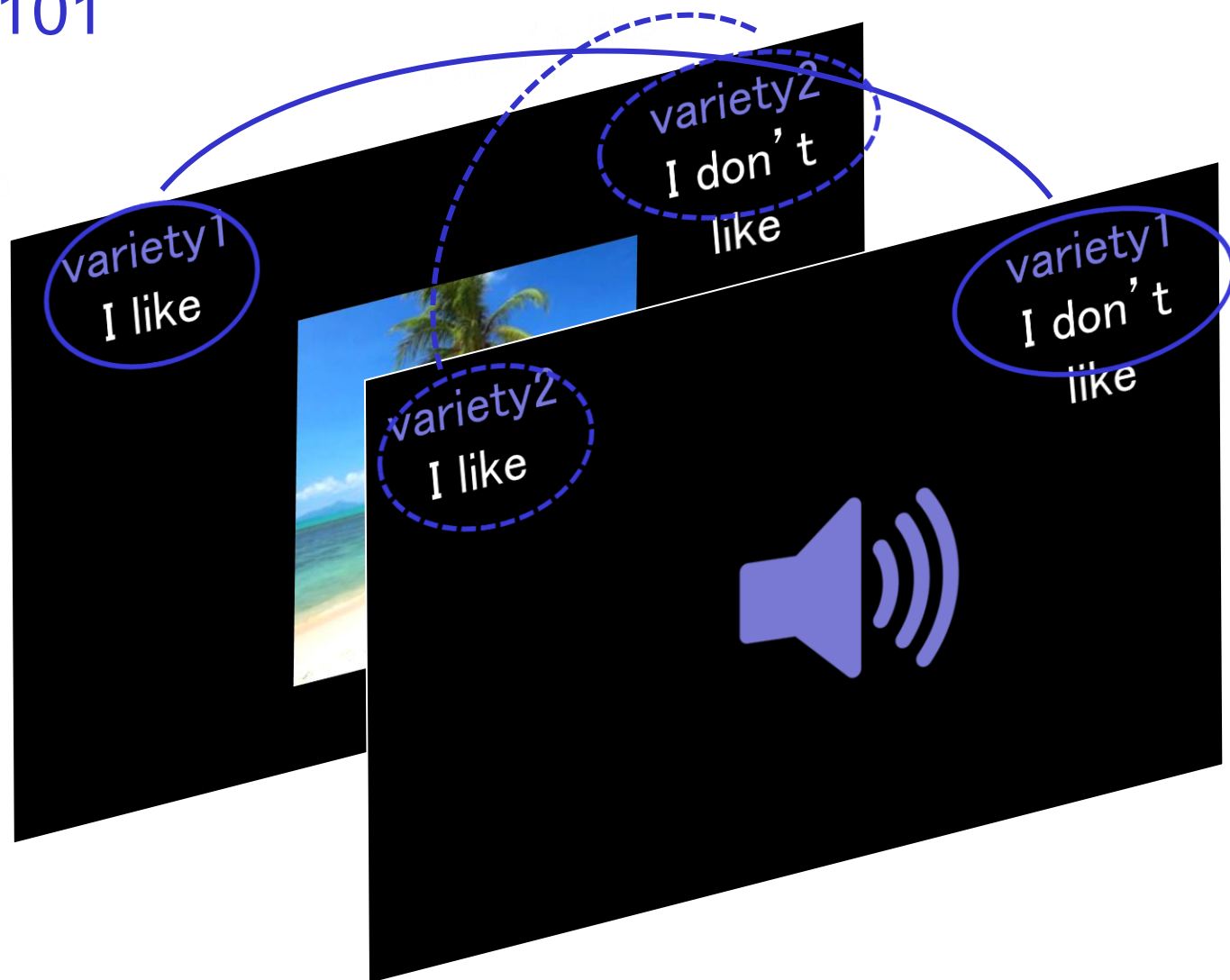
experimental blocks 3 & 5

P-IAT 101



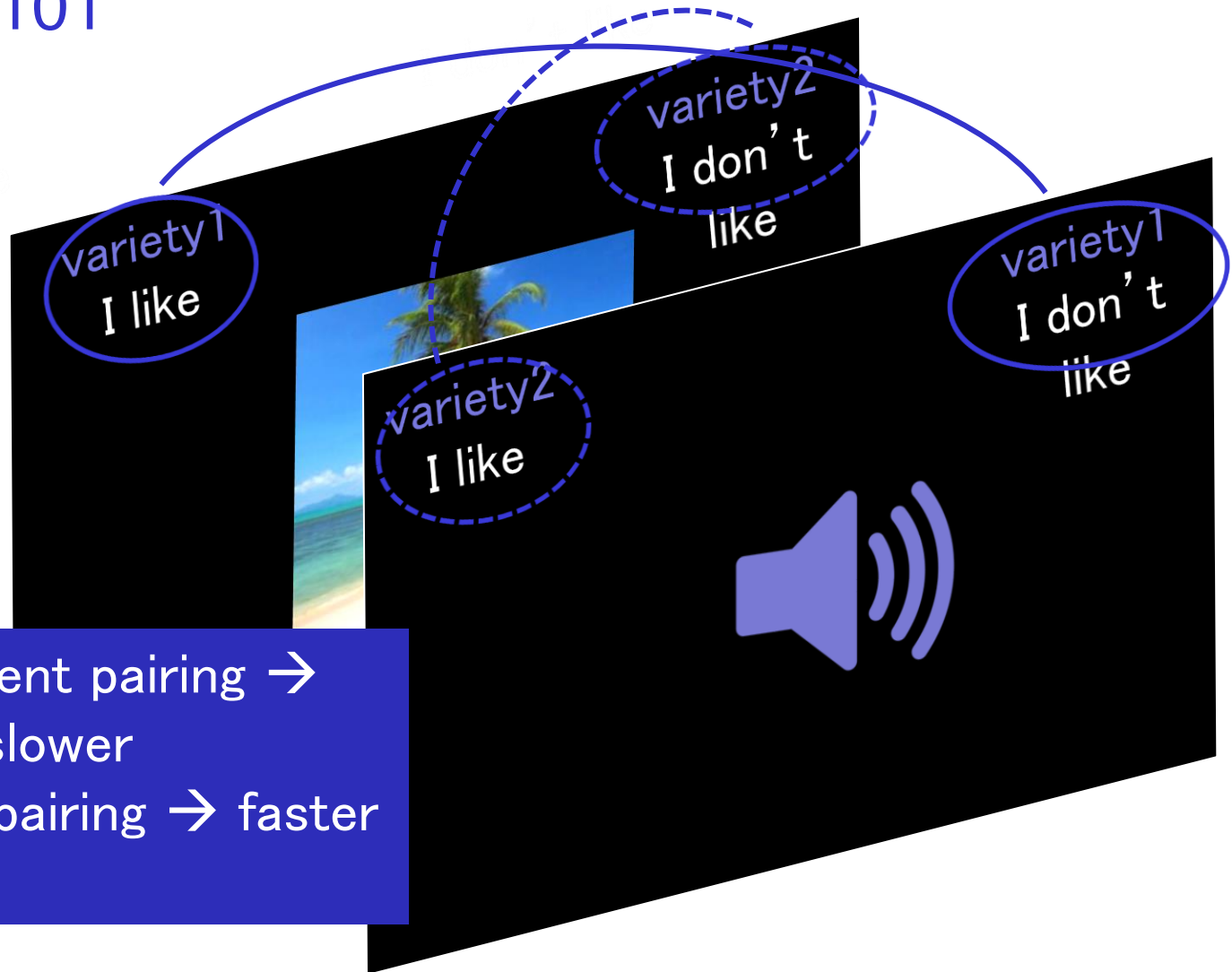
experimental blocks 3 & 5

P-IAT 101



experimental blocks 3 & 5

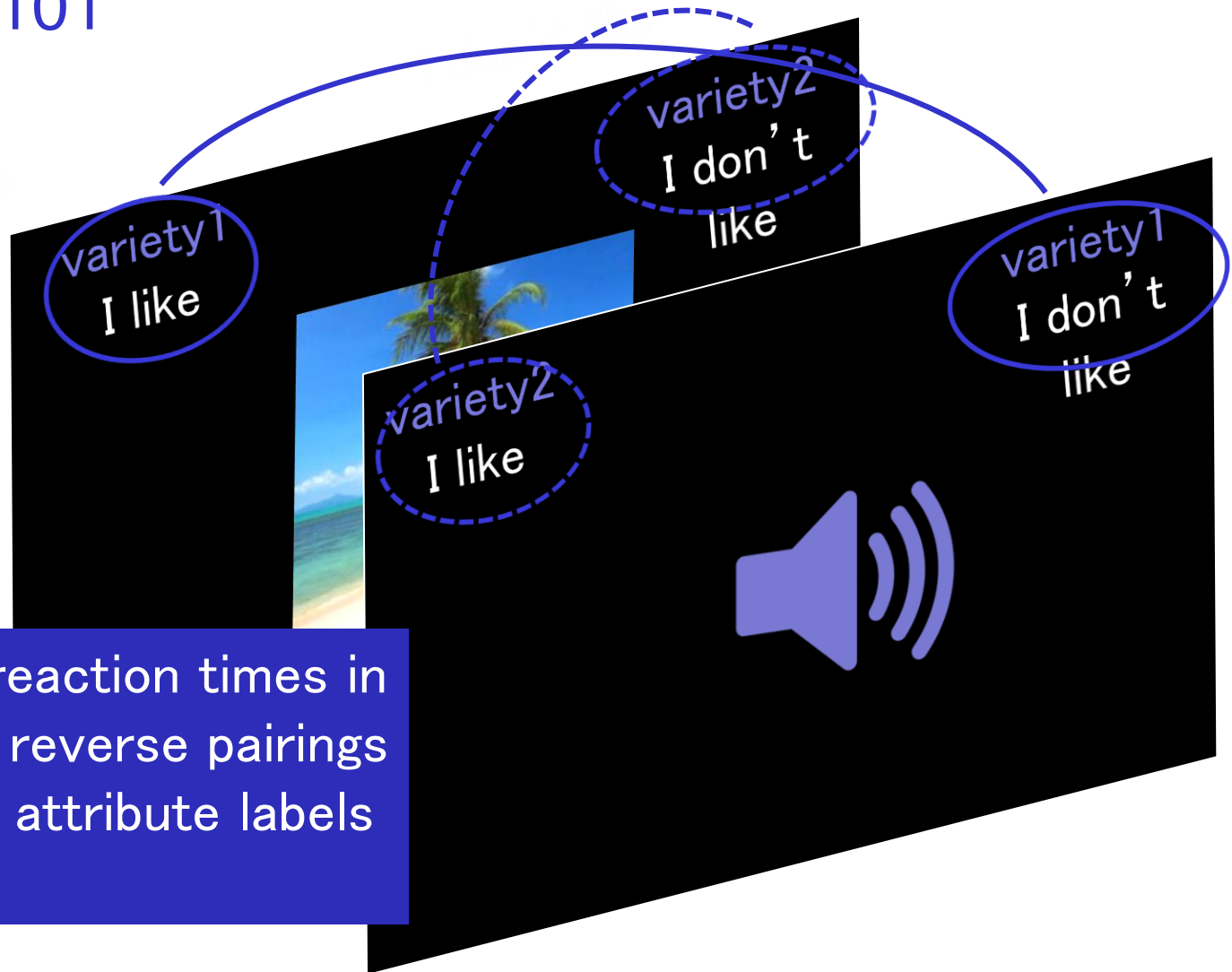
P-IAT 101



incongruent pairing →
slower
congruent pairing → faster

experimental blocks 3 & 5

P-IAT 101



comparing reaction times in
blocks with reverse pairings
of target & attribute labels

experimental blocks 3 & 5

contextualizing the P-IAT

- decontextualization of attitude object

⟷ context dependency of language evaluation

- (e.g. Soukup 2012, 2015; Eckert 2012; Levon & Buchstaller 2015, 341; Campbell–Kibler 2009, Lybaert 2014; Purschke 2015)

contextualizing the P-IAT

- decontextualization of attitude object

⟷ context dependency of language evaluation

- → recontextualizing the P-IAT

how?

- social psychological research: possible
- during IAT & before IAT

(Gschwedner et al. 2008, Wittenbrink et al. 2001, Uhlmann & Swanson 2004, Dasgupta & Greenwald 2001, Karpinski & Hilton 2001, but see Sherman et al. 2003 for an opposing view)

contextualizing the P-IAT

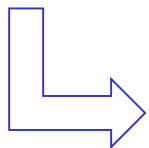
- decontextualization of attitude object

⟷ context dependency of language evaluation

- → recontextualizing the P-IAT

how?

- social psychological research: possible
- during IAT & before IAT



importing context possible for P-IAT
as measure of language attitudes?

case study: experiment design

- previous studies: (e.g. Lybaert 2014; Geeraerts & Van de Velde 2013)

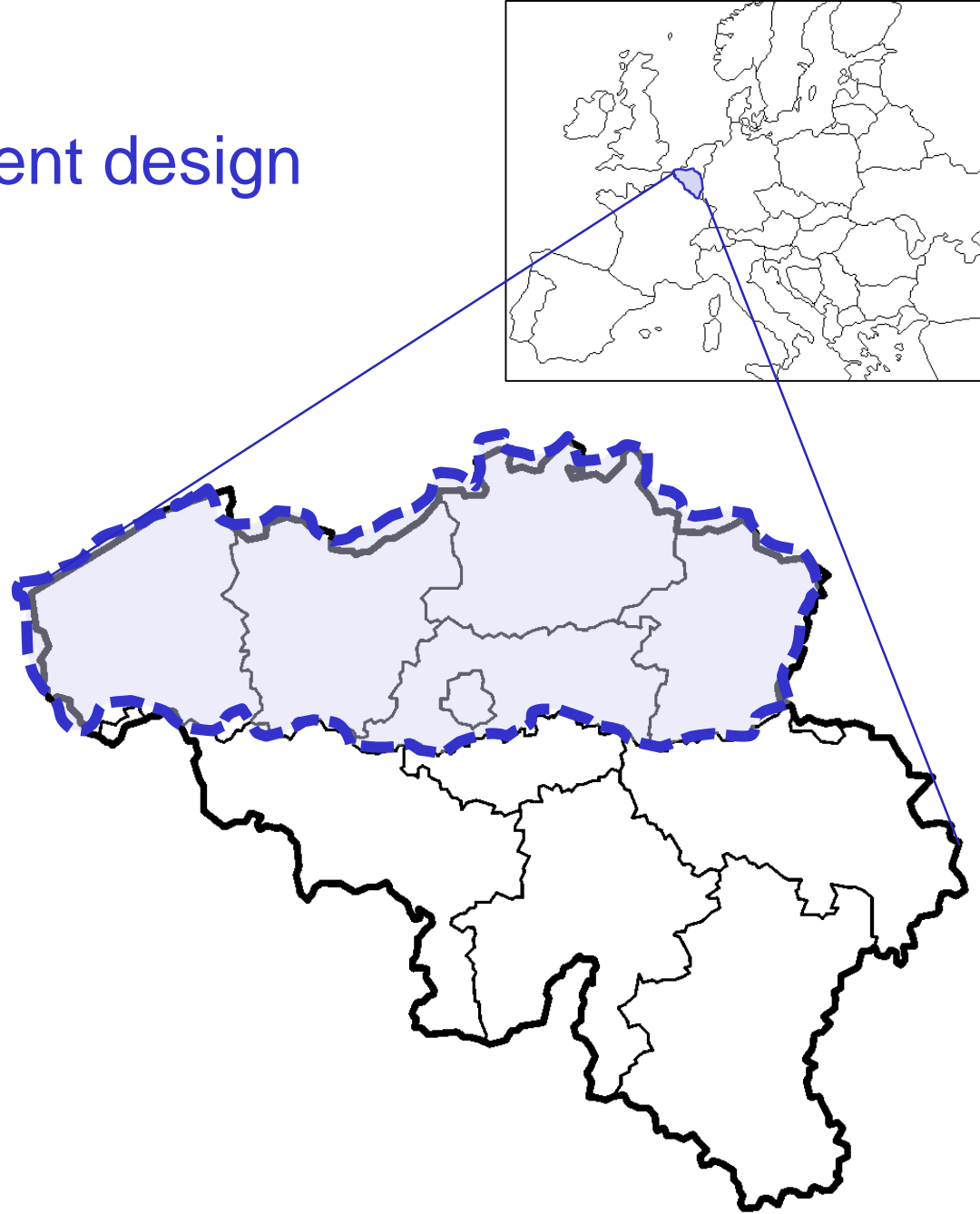
attitudes towards regional language variation in Dutch speaking Belgium are context dependent

- standard Belgian Dutch (SBD) → formal situations
- regionally accented speech → informal situations

- → can we measure this variation using the P-IAT?

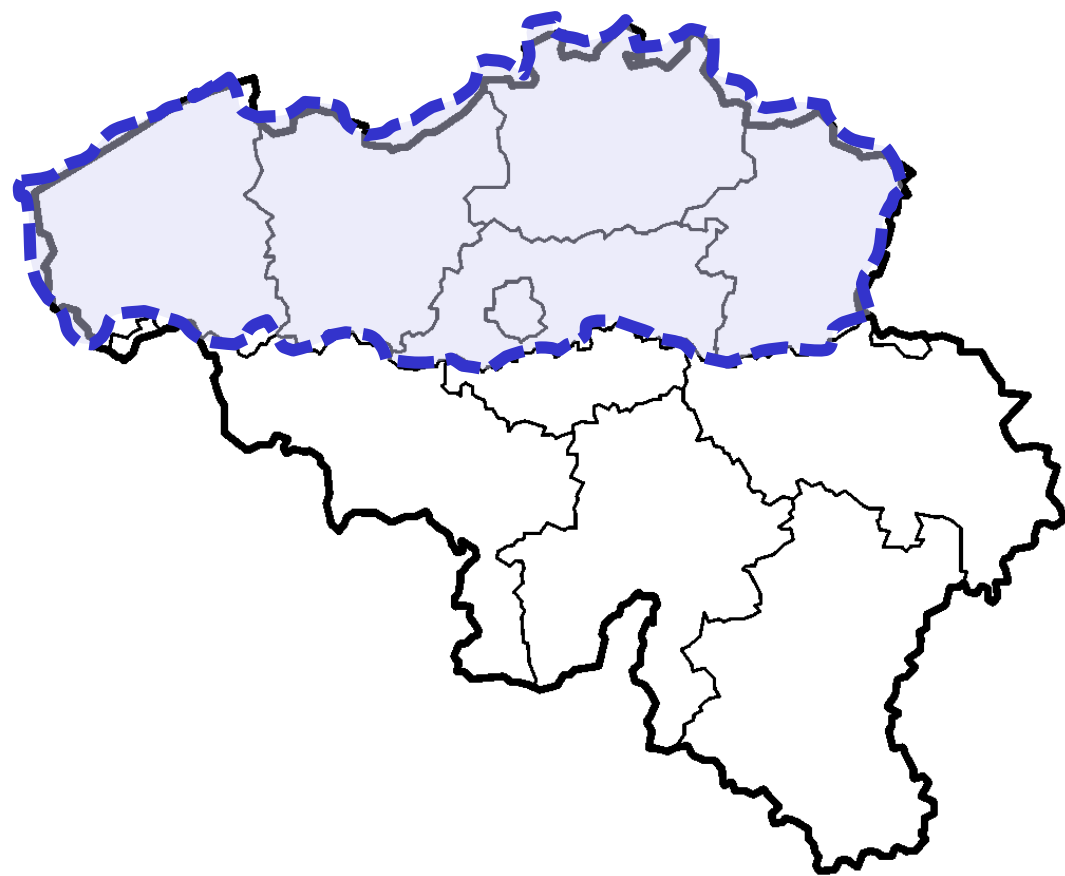
case study: experiment design

- target varieties:



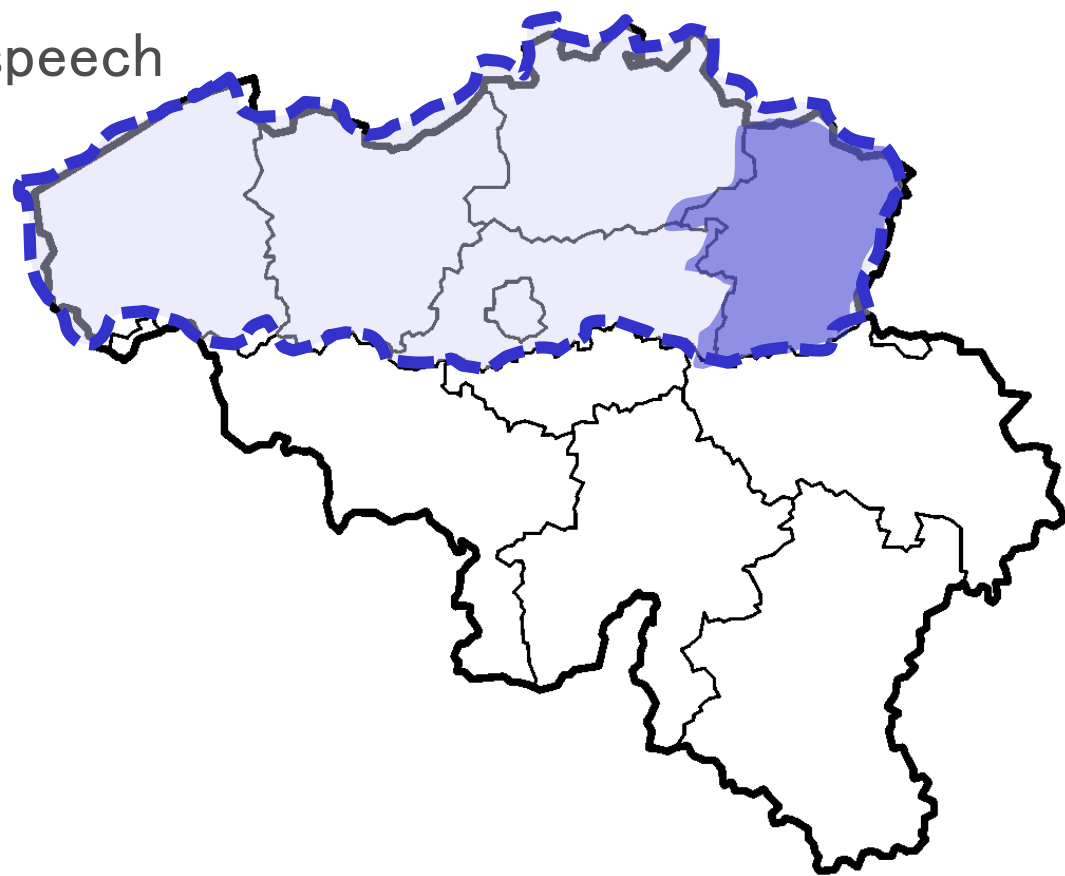
case study: experiment design

- target varieties:
 - SBD accented speech



case study: experiment design

- target varieties:
 - SBD accented speech
 - Limburg accented speech



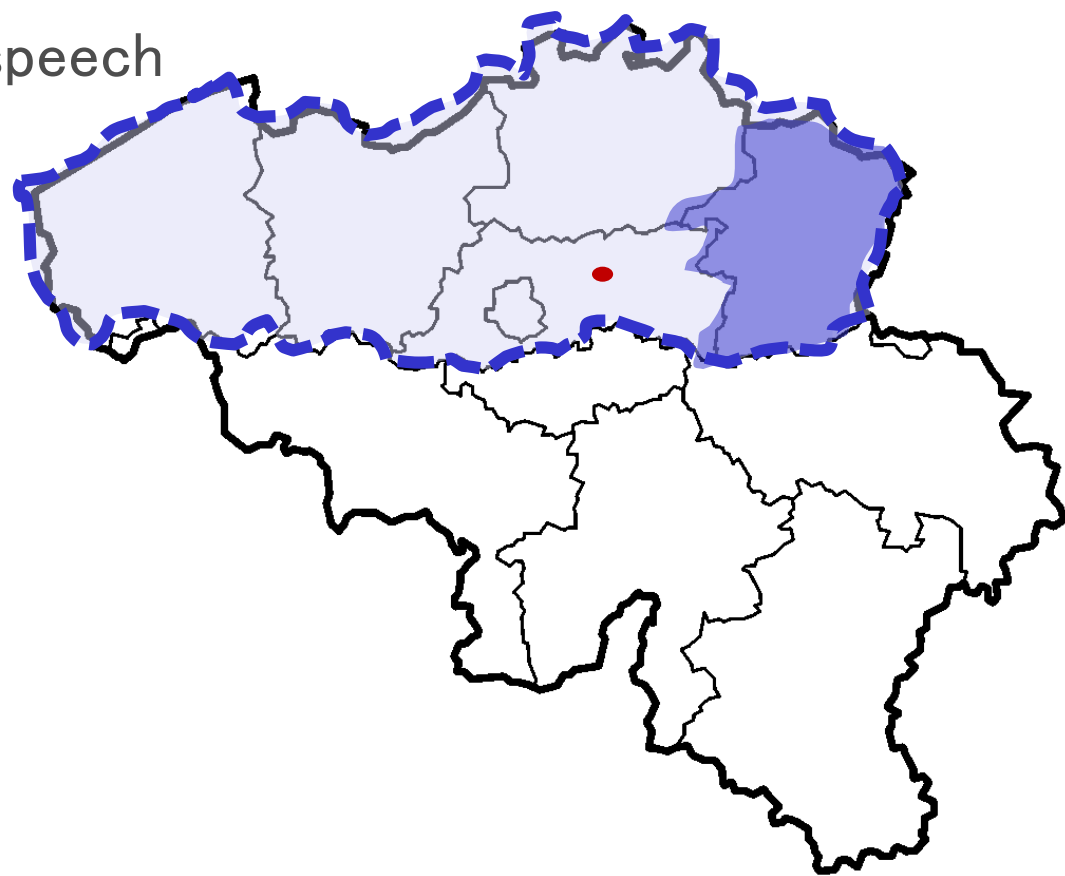
case study: experiment design

- target varieties:
 - SBD accented speech
 - Limburg accented speech

- participants:
160 Limburgian
students in Leuven

$M_{\text{age}} = 20.96$

gender → 55% f



case study: experiment design

- two manipulations:
 - context: formal (news) vs. informal (socializing with friends & family)
 - context presentation: background image vs. multiple images between blocks



case study: experiment design

	background picture								slides							
	block order 1		block order 2		block order 1		block order 2		block order 1		block order 2		block order 1		block order 2	
	for	inf	for	inf	inf	for	inf	for	for	inf	for	inf	inf	for	inf	for
# participants	a 20		b 20		c 20		d 20		e 20		f 20		g 20		h 20	

case study: experiment design

- reaction times \rightarrow D scores
- context effect = difference of D scores

case study: experiment design

- 2 IATs followed by explicit rating task

- a. Hoe sta je tegenover de **accenten** die je in het experiment gehoord hebt, in een **informele situatie** (bv. aan tafel of tijdens een avondje uit met vrienden of familie)?

Kleur een bolletje: hoe dichterbij een accent, hoe positiever je dat accent vindt.

Limburgs accent ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ neutraal accent

- b. Hoe sta je tegenover een **Limburgs accent** (zoals gehoord in het experiment) in een **informele situatie** (bv. aan tafel of tijdens een avondje uit met vrienden of familie)?

negatief ☐ ☐ ☐ ☐ ☐ ☐ ☐ positief

- c. Hoe sta je tegenover een **neutraal accent** (zoals gehoord in het experiment) in een **informele situatie** (bv. aan tafel of tijdens een avondje uit met vrienden of familie)?

negatief ☐ ☐ ☐ ☐ ☐ ☐ ☐ positief

case study: results

- P-IAT

predictor		estimate	<i>p</i>	
intercept (grand mean)		0.001	.97	n.s.
context order				
	<i>formal-informal</i>	−0.042	.10	n.s.
context type				
	<i>background</i>	−0.013	.61	n.s.
block order				
	<i>B01</i>	0.009	.74	n.s.
context order x block order				
	<i>formal first x B01</i>	0.079	< .01	**

case study: results

- P-IAT

predictor		estimate	<i>p</i>	
intercept (grand mean)		0.001	.97	n.s.
context order				
	<i>formal-informal</i>	−0.042	.10	n.s.
context type				
	<i>background</i>	−0.013	.61	n.s.
block order				
	<i>B01</i>	0.009	.74	n.s.
context order x block order				
	<i>formal first x B01</i>	0.079	< .01	**

case study: results

- P-IAT

predictor		estimate	<i>p</i>	
intercept (grand mean)		0.001	.97	n.s.
context order				
	<i>formal-informal</i>	−0.042	.10	n.s.
context type				
	<i>background</i>	−0.013	.61	n.s.
block order				
	<i>B01</i>	0.009	.74	n.s.
context order x block order				
	<i>formal first x B01</i>	0.079	< .01	**

case study: results

- P-IAT

first block in BO1

SBD	Limburg
I like	I don't like

first context: formal

first block in BO2

Limburg	SBD
I like	I don't like

first context: formal

first block in BO1

SBD	Limburg
I like	I don't like

first context: informal

first block in BO2

Limburg	SBD
I like	I don't like

first context: informal

case study: results

- P-IAT

first block in BO1

SBD	Limburg
I like	I don't like

first context: formal

first block in BO2

Limburg	SBD
I like	I don't like

first context: formal

first block in BO1

SBD	Limburg
I like	I don't like

first context: informal

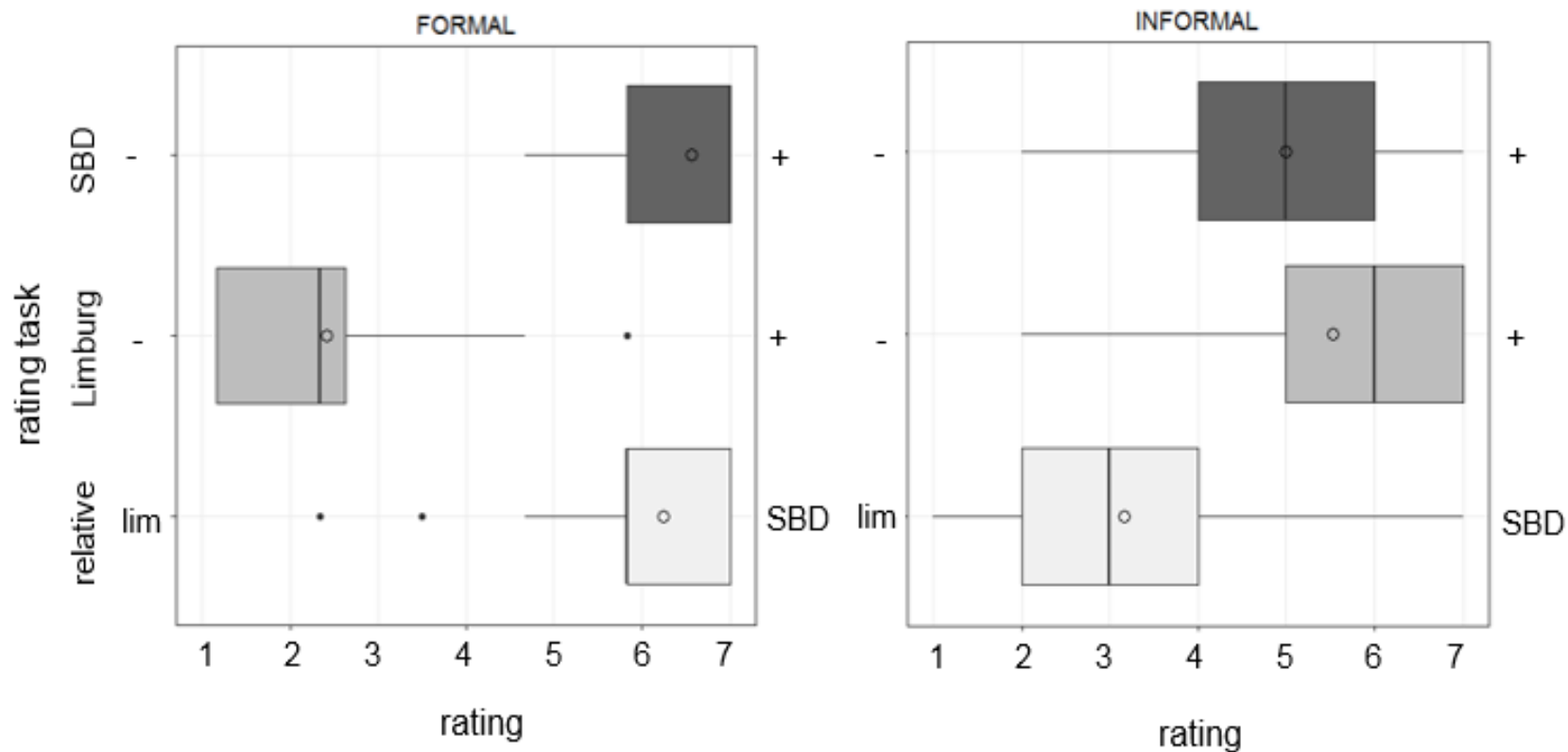
first block in BO2

Limburg	SBD
I like	I don't like

first context: informal

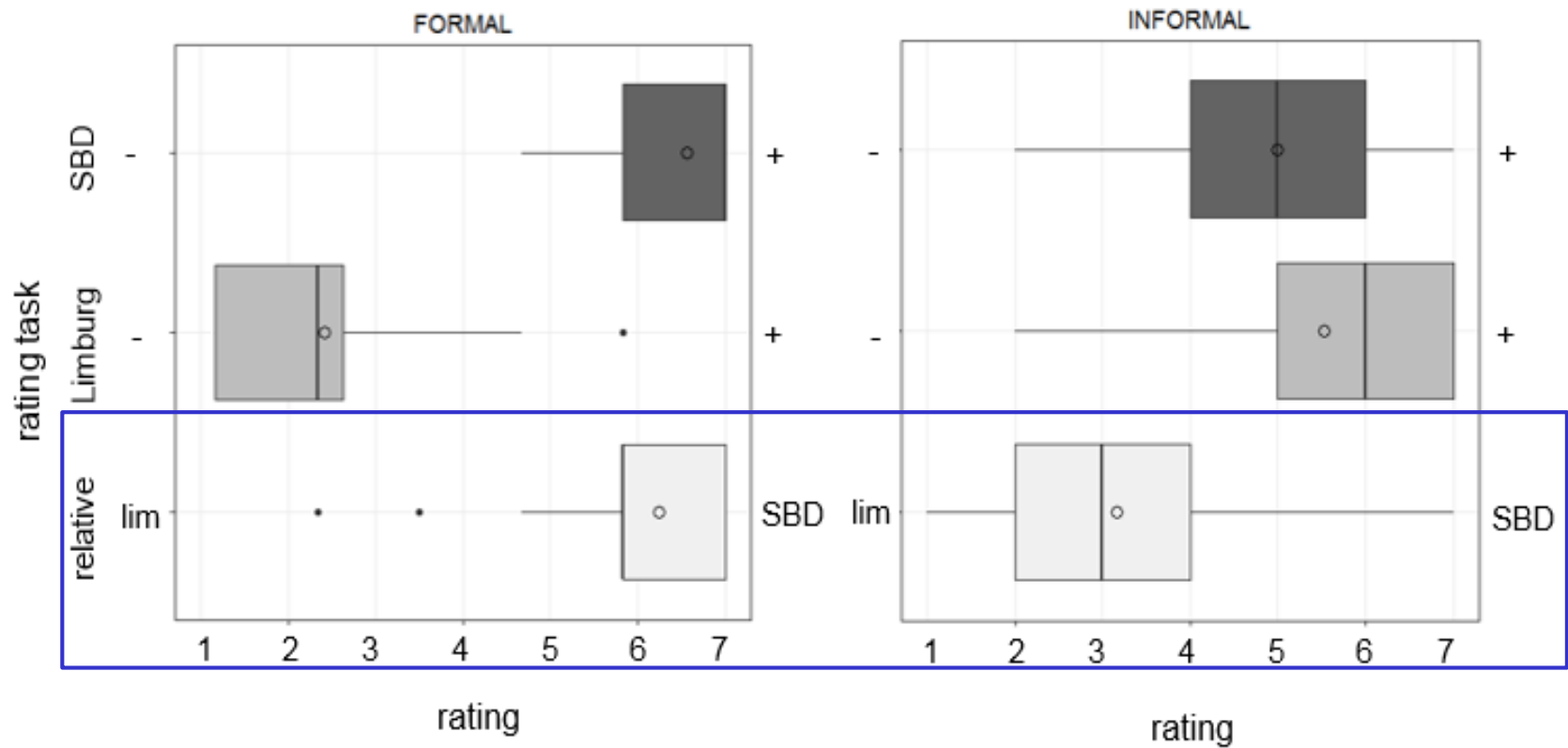
case study: results

- explicit ratings



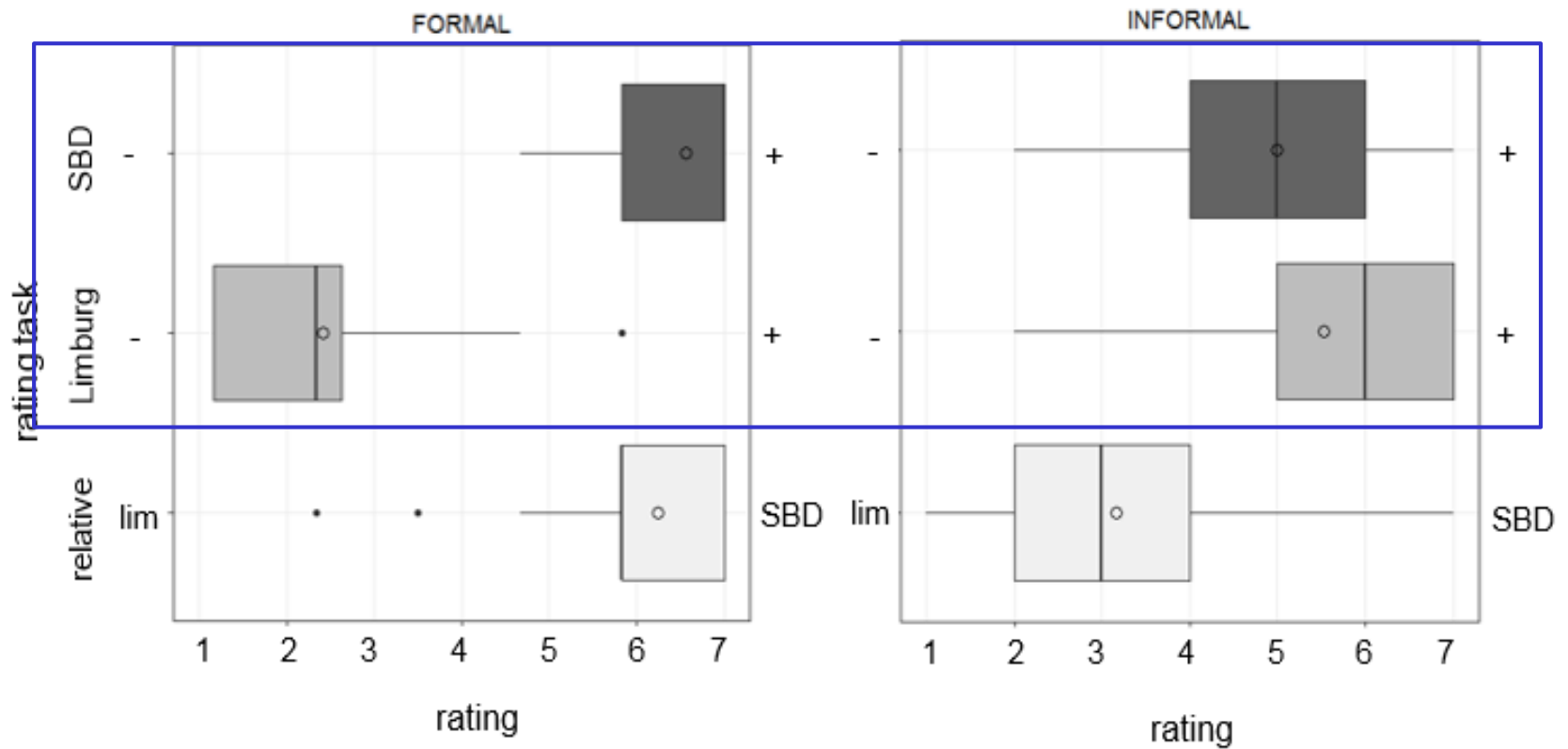
case study: results

- explicit ratings



case study: results

- explicit ratings



case study: discussion

- why no overall context effect?
 - methodological aspects
 - context stimuli
 - context not activated
 - hypothesis not detailed enough (cf. asymmetry in explicit measurement)
 - is every participant equally sensitive to situational context? (individual variation)

case study: conclusions

- contextualizing P-IAT?
possible, but not straightforward
successful application in social psychology suggests further explorations are worthwhile
- explicit attitudes:
further research needed into the asymmetric attitudes towards SBD and regional varieties in context

thank you!

for further information:

laura.rosseel@kuleuven.be

<http://www.ling.arts.kuleuven.be/qlvl/laura>



case study: discussion

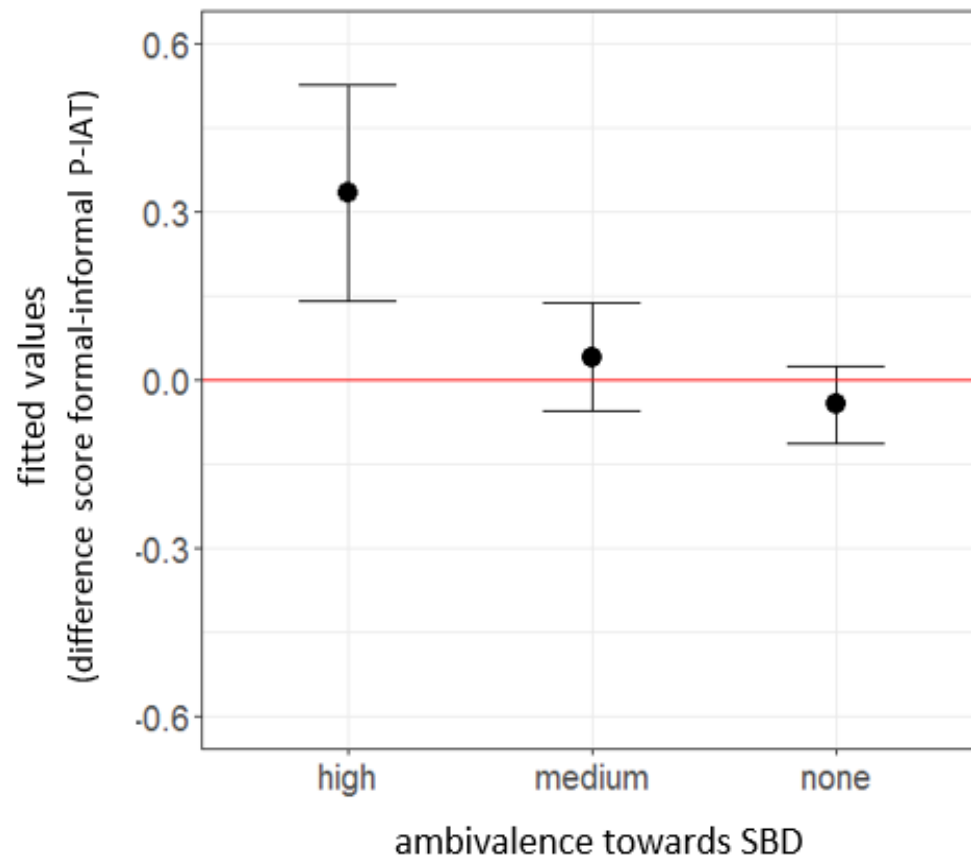
- role norm sensitivity

— \approx ambivalence (Petty & Briñol 2009)

→ hypothesis: ambivalent language users are more sensitive to context cues

case study: discussion

- explicit ratings as a proxy for ambivalence



case study: discussion

norm sensitivity may have a mediating role for contextualised language attitudes → avenue for further studies on individual differences in language evaluation

references

- Babel, M.** 2010. Dialect divergence and convergence in New Zealand English. *Language in Society*, 39(4), 437–456.
- Campbell-Kibler, K.** 2009. The nature of sociolinguistic perception. *Language Variation and Change*, 21(01), 135–156.
- Campbell-Kibler, K.** 2012. The Implicit Association Test and sociolinguistic meaning. *Lingua* 122: 753–763.
- Dasgupta, N., & Greenwald, A. G.** 2001. On the malleability of automatic attitudes: Combating automatic prejudice with images of admired and disliked individuals. *Journal of Personality and Social Psychology*, 81(5), 800–814.
- Eckert, P.** 2012. Three waves of variation study: The emergence of meaning in the study of sociolinguistic variation. *Annual Review of Anthropology*, 41, 87–100.
- Ferguson, M. J., & Bargh, J. A.** 2007. Beyond the attitude object: Automatic attitudes spring from object-centered-contexts. In B. Wittenbrink & N. Schwarz (Eds.), *Implicit Measures of Attitudes* (pp. 216–246). New York: Guilford Press.

references

- Geeraerts, D. & Van de Velde, H.** 2013. Supra-regional characteristics of colloquial Dutch. In Hinskens, F., & Taeldeman, J. (eds.), *Language and Space. An International Handbook of Linguistic Variation. Volume 3: Dutch*, 532–556. Berlin/Boston: De Gruyter Mouton.
- Greenwald, A. G., McGhee, D. E., & Schwartz, J. L. K.** 1998. Measuring individual differences in implicit cognition: The implicit association test. *Journal of Personality and Social Psychology*, 74(6), 1464–1480. doi:10.1037//0022-3514.74.6.1464
- Greenwald, A. G., Nosek, B. A., & Banaji, M. R.** 2003. Understanding and using the Implicit Association Test: I. An improved scoring algorithm. *Attitudes and Social Cognition* 85(2): 197–216.
- Gschwendner, T., Hofmann, W., & Schmitt, M.** 2008. Differential Stability. The effects of acute and chronic construct accessibility on the temporal stability of the implicit association test. *Journal of Individual Differences*, 29(2), 70–79.
- Hilton, N. H., Rosseel, L., Smidt, E. M. & Coler M.** 2016. Using the IAT to understand the relationship between variant usage patterns and social meaning. Talk presented at *Sociolinguistics Symposium 21*, Murcia.

references

- Karpinski, A., & Hilton, J. L. 2001. Attitudes and the Implicit Association Test. *Journal of Personality and Social Psychology*, 81(5), 774–788.
- Lee, R. 2015. Implicit associations with Welsh in two educational contexts. *York Papers in Linguistics*, 2(14), 81–105.
- Levon, E. , & Buchstaller, I. 2015. Perception, cognition, and linguistic structure: The effect of linguistic modularity and cognitive style on sociolinguistic processing. *Language Variation and Change*, 27(3), 319–348.
- Llamas, C., Watt, D., & MacFarlane, A. E. 2016. Estimating the Relative Sociolinguistic Salience of Segmental Variables in a Dialect Boundary Zone. *Frontiers in Psychology*, 7, 1163.
- Loudermilk, B. C. 2015. Implicit attitudes and the perception of sociolinguistic variation. In A. Prikhodkine & D. Preston (Eds.), *Responses to Language Varieties. Variability, Processes and Outcomes* (pp. 137–156). Amsterdam/Philadelphia: John Benjamins.
- Lybaert, C. 2014. *Het gesproken Nederlands in Vlaanderen. Percepties en attitudes van een spraakmakende generatie*. Unpublished PhD Thesis, Universiteit Gent.

references

- Pantos, A.J.** 2010. *Measuring Implicit and Explicit Attitudes Towards Foreign-accented Speech*. PhD dissertation, Rice University.
- Pantos, A. J.** 2012. Defining the cognitive mechanisms underlying reactions to foreign accented speech: An experimental approach. *Review of Cognitive Linguistics* 10(2): 427–453.
- Pantos, A. J.** 2015. Applying the Implicit Association Test to language attitudes research. In Prikhodkine, A. & Preston, D. R. (eds.), *Response to Language Varieties. Variability, processes and outcomes*, 117–136. Amsterdam/Philadelphia: Benjamins.
- Purschke, C.** 2015. REACT – A constructivist theoretic framework for attitudes. In Prikhodkine, A. & Preston, D. R. (eds.), *Response to Language Varieties. Variability, processes and outcomes*, 38–53. Amsterdam/Philadelphia: Benjamins.
- Redinger, D.** 2010. Language Attitudes and Code-switching Behaviour in a Multilingual Educational Context: The Case of Luxembourg. PhD dissertation, University of York.

references

- Rossee, L., Speelman, D., & Geeraerts, D. 2015. Can social psychological attitude measures be used to study language attitudes? A case study exploring the Personalized Implicit Association Test. In *Proceedings of the 6th Conference on Quantitative Investigations in Theoretical Linguistics*.
- Schwarz, N. 2007. Attitude Construction: Evaluation in Context. *Social Cognition*, 25(5), 638–656.
- Sherman, S. J., Rose, J. S., Koch, K., Presson, C. C., & Chassin, L. 2003. Implicit and Explicit Attitudes Toward Cigarette Smoking: the Effects of Context and Motivation. *Journal of Social and Clinical Psychology*, 22(1), 13–39.
- Soukup, B. 2012. Current Issues in the Social Psychological Study of “Language Attitudes”: Constructionism, Context, and the Attitude–Behavior Link. *Language and Linguistics Compass*, 6(4), 212–224.
- Soukup, B. 2015. Mixing methods in the study of language attitudes. Theory and application. In Prikhodkine, A. & Preston, D. R. (eds.), *Response to Language Varieties. Variability, processes and outcomes*, 55–84. Amsterdam/Philadelphia: Benjamins.

references

- Uhlmann, E., & Swanson, J. 2004. Exposure to violent video games increases automatic aggressiveness. *Journal of Adolescence*, 27, 41–52.
- Watt, D., & Llamas, C. 2015. Perception of difference: Socioindexical forms in the Scottish/English border region. Talk presented at *ICLaVE 8*. Leipzig.
- Wittenbrink, B., Judd, C. M., & Park, B. 2001. Evaluative versus Conceptual Judgments in Automatic Stereotyping and Prejudice. *Journal of Experimental Social Psychology*, 37(3), 244–252.